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AUTHOR McKern, Debra
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ABSTRACT

Library preservation programs have focused traditionally on two areas: (1) conservation or restoration techniques to preserve the original item as an artifact; or (2) reformatting of items to microfilm or digital formats to preserve the intellectual content. A collections conservation program focuses on the maintenance or stabilization of endangered research materials. The cost effectiveness of treatments is maximized by batching work, using permanent durable material, and employing sound methods. This collections conservation concept will be demonstrated by illustrating treatments used by the Library of Congress and their comparable costs, including: library binding; mass deacidification; in-house repair and binding; box-making using an automated machine; and labeling using the Z39.50 protocol to download bibliographic information. Training and level of staff are also discussed. (Author/MES)

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Fitness for Purpose: The Role of Stabilization in a Collections Conservation Program

Debra McKern
Chief, Binding & Collections Care Division
Library of Congress

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Abstract

Library preservation programs have focused traditionally on twoareas: (1) conservation or restoration techniques to preserve the original item as an artifact or (2) reformatting of items to microfilm or digital formats to preserve the intellectual content. A collections conservation program focuses on the maintenance or stabilization of endangered research materials. The cost effectiveness of treatments is maximixed by batching work; using permanent, durable materials; and employing sound methods.

This collections conservation concept will be demonstrated by illustrating treatments used by the Library of Congress and their comparative costs, including:

- *library binding;*
- *mass deacidification;*
- *in-house repair and binding;*
- *box-making using the CMI automated machine; and,*
- *labeling using the Z39.50 protocol to download bibliographic information.*

Training and level of staff are also discussed.

Paper

Today, there is a greater array of treatment options available to us in the preservation

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community and a greater emphasis on «collections conservation,» a term used in the United States to describe both preventive conservation and stabilization measures. Examples are shown in the lefthand and center columns of the chart. Collections conservation shares with conservation the use of permanent, durable materials and sound methods but is further characterized by the cost effectiveness achieved through batching work and standardizing procedures. Because a collections conservation program emphasizes more routine activities such as staff and user education, cleaning, boxing, environmental controls, and emergency preparedness, it is often undervalued. I am particularly pleased that IFLA, in holding this workshop on Binding, Boxing, and Storage, has recognized the important role these activities play in preserving collections.

Table 1. LEVELS OF TREATMENT

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Before we can talk in detail about «Binding, Boxing, and Storage», we need to define the framework in which these treatment options reside. Traditionally, library preservation programs have focused on two areas: (1) conservation or restoration techniques to preserve the original item as an artifact, or (2) reformatting of items to microfilm or digital formats to preserve the intellectual content or provide a surrogate copy. These are shown in the right-hand column of the chart, under «Item Level» treatment.

This graphic illustrates the relative costs of the four treatment categories. The least expensive treatment in terms of unit cost is PREVENTIVE. While the cost of building renovation to provide optimal environmental conditions can amount to millions of dollars, the cost is small when spread across the millions of items contained in that building and the hundreds of years added to the longevity of the items. Economy of scale is achieved in the STABILIZATION of collections. Handled at the item level, stabilization is often used when the value of the item does not merit more elaborate treatment. The importance of value on preservation treatment decision-making will be explored shortly.

Table 2 RELATIVE COSTS

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REFORMATTING/SURROGATE TREATMENT provides another copy (in the same format or other formats) in order to «retire» the delicate or deteriorated original from further use. For example, the Library microfilmed the papers of Margaret Mead, a famous anthropologist, to make them more widely available and to protect the originals from further use. Digital reformatting can sometimes exceed the cost of major conservation treatment, however. Full CONSERVATION TREATMENT is the most costly because it require the skills of a trained conservator, a fully-equipped lab, testing prior to treatment, and extensive photodocumentation throughout the process.

Keeping in mind these four treatment categories and their relative costs, let's examine the criteria used to set preservation priorities at LC. In treatment decision-making, collections are evaluated by VALUE, USE, and CONDITION. VALUE is further broken down into four tiers:

Table 3 VALUES

Platinum	The most priceless items, also referred to as the Top Treasures. An example is the contents of Abraham Lincoln's pockets on the night of his assassination.
Gold	Rare items having prohibitive replacement cost, high market value, and significant cultural, historical, and/or artifactual importance.
Bronze	The general research collections.
Copper	Items that are not retained permanently.

USE is measured by the frequency of circulation (internal or external); assignment to a reference collection; degree of shifting and other processing of the item; or need for exhibition. CONDITION is assessed by noting whether the item is damaged or not intact, poorly housed, or on an unstable medium.

Table 4. PRESERVATION PRIORITIES

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The matrix you see here shows the intersection of the three criteria (VALUE, USE, and CONDITION) which determine preservation priorities. By using this approach, LC is able to ensure that items are selected for treatment which are both worthy (due to content) and vulnerable (due to condition and past or future use). We refer to this approach as «Fitness for Purpose.» In other words, an item of high value in poor condition or on an unstable medium which is used or exhibited on a regular basis would receive a «Rolls Royce» treatment, while a newspaper which is also acquired in microform would be allowed to deteriorate. Applying this matrix minimizes the «cart-before-the-horse» phenomenon which occurs when a popular treatment option (e.g., preservation microfilming, digitization) drives the selection process instead of the reverse.

The platinum collections, because of their extreme rarity, are given the highest priority regardless of use or condition. Often they receive «duplicate» treatment, meaning the original is given intensive conservation treatment, it is stored in a custom microclimate, and surrogates are made. The item you see here is an architectural drawing of the U.S. Capitol building from the Washingtoniana Collection. Treatment included removal of poor quality backings, washing, and construction of custom housing.

The gold collections are further prioritized by frequency of use and state of deterioration (condition). The George Washington Papers, for example, are routinely studied by historians (high use) but they are in good condition on a stable medium (good quality paper). Therefore, stabilization is indicated (Category 3). However, another gold collection item, a wax cylinder recording by Thomas Edison, is considered more vulnerable or at risk because it is frequently exhibited (high use) and on an unstable medium (poor condition). Thus it is placed in Category 2 and given surrogate and stabilization treatment.

The gold and bronze collections are the main focus of LC's stabilization efforts. Because of the vast size of these collections, an economical approach such as stabilization is a necessity. Table 5 shows the relationship between the preservation priorities and the four treatment categories.

Table 5. Preservation Priorities and Treatment Options

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Now that the context has been established, I would like to talk in greater detail about three of the collections conservation treatment options: binding, boxing, and mass deacidification. (Storage is covered ably by my colleagues on the panel.)

BINDING

For the bronze (general) collections, the Library of Congress feels it is necessary to bind paperbacks as acquired for the following reasons: (1) poor quality publishers' binding; (2) crowded conditions in the stacks; (3) lack of online holdings records to verify that other copies are held. We do not bind paperbacks which receive minimal-level cataloging. There are also categories of materials which are not «bindable.» These include those that have artifactual value, those that have accompanying material in another format, those whose margin is inadequate, or those that are made of a material that is too stiff or slick to bind. In these cases, a protective enclosure is constructed instead.

The fitness for purpose philosophy applies also to categories of library binding. The Library of Congress contracts with a commercial library binder to provide different products or styles of binding. Staff sort the incoming paperbacks and unbound serial issues into these styles based on existing physical structure (whether in signature format or single sheets, for example) and projected use. This series of slides [Olga: I'm sending these as a separate WordPerfect file.] shows the range of products and their cost. Note the three categories: custom, standard, and economy. These are used to make distinctions between products which meet the NISO/LBI Standard for Library Binding and those which do not. «Standard» binding meets the requirements; «Custom» binding exceeds the requirements; and, «Economy» binding falls below the standard requirements. The turnaround time is four weeks, with an option for rush binding on a two-week schedule.

Increasingly, economy binding is relied upon for lesser-used materials. The binding method (or method of leaf attachment) is the same as in Standard Binding. Savings are realized by using a less durable covering material (e.g., bookcloth rather than buckram) and by using a flat-back structure rather than rounding and backing.

The United States is fortunate to have a very strong trade association, the Library Binding Institute, which works closely with preservation librarians to maintain high quality at a reasonable cost. In order to stay competitive in the library binding market, commercial binders are making constant improvements. Many cost savings have been achieved in recent years through the enhancement of automated processes for capturing bibliographic information without rekeying it. LC is now using the Z39.50 gateway to download author, title, and call number information to the binder's automation system, eliminating all printing errors. This becomes important when you understand the sheer size of the Library's binding program. The Library ships approximately 5,000 volumes each week to the contract binder.

To complement the library binding program, LC also has several in-house binding options for bronze collections. Pamphlet binding is done by collections care technician staff, using preservation-quality binders purchased in a variety of standard sizes. Single-signature pamphlets are sewn in a Figure 8 stitch into the binder, making the procedure non-invasive and completely reversible. «Stiffening» is an in-house technique used for annual serials or other high use, short life span items. The process involves affixing a 20-point board and a Tyvek hinge to the inside front and back covers of a paperback volume to provide support for the text block. This treatment is reserved for items which are needed by users immediately and cannot be out of circulation the length of time required for commercial binding. Because this type of material also becomes outdated quickly, there is no need to be concerned about providing a hardcover for long-term use.

DEACIDIFICATION

The Library of Congress estimates that it costs 500% more to microfilm a volume after it has become embrittled than to deacidify it when the paper is still strong. This philosophy has driven our aggressive program to mass deacidify large portions of our collections. Following a lengthy period of research and testing, LC established a contract with Preservation

Technologies Limited Partnership (PTLP) to use the firm's Bookkeeper process to treat materials through 2001. To date, LC has deacidified over 200,000 books from its permanent collections. A new testing phase has begun to evaluate the efficacy of treating manuscript and archival materials using PTLP's new chamber designed for this purpose.

The types of materials selected for treatment include: high use, good condition, gold; high use, poor condition, bronze; low use, poor condition, bronze; and high use, good condition, bronze. Within these criteria, the focus is on Americana materials central to the mission of the Library. Treatment has been completed for the following classes:

- Class E American History
- Class F1-975 U.S. Local History
- Class CS71 U.S. Family History
- Classes PZ3-4 Fiction in English

Treatment is scheduled for the following classes:

- Class PS American Literature
- Class KF U.S. Federal Law
- Class JK U.S. Political Science
- Class PN Literary History and Collections

So far the emphasis has been on retrospective collections. In the next contract period, LC will begin treating collections at the point of acquisition, particularly those materials acquired through LC's field offices.

BOXING

Another important stabilization option is the construction of protective enclosures. Enclosures are used in the following circumstances:

- when an item is not bindable, such as loose folded maps, loose plates;
- when an item is brittle but serviceable;
- when artifactual items are in need of extra protection;
- when an item is at risk but funds are not available for more extensive treatment; and,
- when an item consists of several parts which are shelved in one location, such as a book with accompanying audio cassette.

The Library of Congress is fortunate to own an automated box-making machine which makes it possible to stabilize major parts of our collections. There are similar machines in St. Petersburg, Russia, and the Netherlands. The machine can produce either a phase box, clam-shell box, or a wrapper. The next series of slides will illustrate how it operates.

Measuring.

The operator enters the dimensions of the book into a laptop computer either by typing in the height, width, and depth, or by scanning these measurements into the laptop using an electronic measuring device. Author/title/call number information needed for later labeling is keyed into the laptop at this time as well.

Box-Making.

The measuring and labeling information collected in the database on the laptop is then imported to the desktop computer attached to the box-making machine. The list of book measurements is displayed on the screen of the computer. The operator selects a group. The box shapes are then displayed on the computer screen. The operator arranges the box shapes to minimize the material waste. Typically, 8-10 boxes can be produced from a single sheet of

board (assuming the books are of standard size).

The operator then loads a 4' x 8' sheet of archival board onto the machine bed. The machine's rollers pull the sheet into place. The operator selects "Run Group" which starts the box-making process. The computer program controls the machine. The machine's rollers move the sheet back and forth in the machine, allowing the sheet to be cut, creased, or marked in the correct location. This is done by the tool head which slides back and forth on a rail. Tools in the tool head include a cutter, a creaser and a pen which adds a control number to each box. The order of the machine operation is: mark, crease, then cut Box 1; mark, crease, then cut Box 2; until all boxes on an individual sheet are completed. After all machine movement has ceased, the operator presses a button on the screen labeled "Fast Forward" and the machine rollers unload the 4' x 8' sheet.

Folding.

Each (flat) box is separated manually from the 4' x 8' sheet. The flat boxes are then folded and assembled, ready to match with the book.

Labeling.

A third computer in the box-making system is used to produce a spine label from data imported from the database on the laptop. The same control number marked on each box by the box-making machine is also printed on the spine label, allowing the label and box to be matched at the end point of assembly.

LC also purchases a wide variety of standard-size enclosures. These enclosures are even more cost effective than the automated, custom-fitted boxes, although use of the standard sizes is restricted to materials which would not suffer mechanical damage. Specifications for each type and size of enclosure approved by LC's conservation and research & testing staff are described in this catalog. Some are custom designs which have been developed by working in consort with vendors and manufacturers. In the near future LC will add specifications to the catalog for the range of acceptable label products.

SUMMARY

The emphasis on stabilization measures as the cornerstone of LC's preservation program allows more items to be protected - a less-is-more philosophy, if you will. Application of the use/condition/value criteria is critical in helping us to know where to place scarce staff resources. LC's collections conservation program is not yet fully developed. More conservation technicians are needed, yet there are few trained conservation technicians in the market place. As the preservation profession matures, the emphasis on collections conservation and the role of technician-level staff will increase.

Library of Congress FY00 prices
Binding & Collections Care Division

Styles of Binding

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